Heidi Ammerlahn

Computer Science and Terrorism

At Sandia National Labs' annual high school math and science awards banquet last year, Heidi Ammerlahn fielded questions from young women interested in going into computer science. One thing they wanted to know was if a female computer scientist could juggle family life as well as a demanding job. "It's so important to help them understand you can have all of these aspects in your life," the 27-year-old says.

Ammerlahn joined Sandia six years ago after graduating from the University of Washington with a dual degree in mathematics and computer science. The Seattle native has been

> Heidi Ammerlahn's team developed computer simulations of a bioterrorist attack in San Francisco International Airport, where a sensor system was installed to detect chemical and biological agents. *(photo courtesy of Sandia)*

fascinated with math her whole life, but says she wanted a career in which her work could have real significance for other people. "I love

the math part - the logic, the order," she says, "but with computer science I can have an impact in my day to day work." "I can honestly say I develop games for a living," she says with a smile. But her work is no joke, and these are not just any games.

The self-described software architect manages a 10-person team that develops computer simulation software to address the threat of terrorist attacks. It's a challenge Sandia had taken up long before Sept. 11, 2001, although both interest and funding for such projects have increased exponentially since then. One of her team's key assignments from the Department of Homeland Security was to create a system that will

detect the presence of nuclear devices in urban areas - and then some. "Once it's detected, what do you do?" she asks.

Her team tackles all possible scenarios from every feasible angle, and then integrates the findings into mind-blowing computer software. In November, Sandia carried out a simulation of a bioterrorist attack at San Francisco International airport, where sensors for detecting chemical and biological agents have been in a trial testing phase for more than a year. Another project she's spearheading is a simulation of the defense system along the United States border, with a goal of determining the best way to make the border more secure without impinging on international commerce.

The Livermore resident likes to unwind by baking, spending time with friends at Livermore's Trinity Baptist church and exploring local hiking trails. And though her last big "vacation" from the lab was undertaking a master's degree full-time at Stanford, she has no complaints about her chosen path. "This has been my dream for many years," she says.